

arising from the unbalanced mass of the ring overcomes the spring and allows the ring to strike a trigger which releases the main-valve operating gear.

Probably the best type of main governor is that where the main valve is controlled by oil (fig. 13). This system by oil control lends itself very well to the requirements of the emergency governors set to shut down the main plant when the speed exceeds about 12 per cent above the normal.

Condensers.—The testing of condensers, especially where sea water is used as circulating water, is important. Testing for and replacing faulty tubes may cost as much per annum as the whole of the electrical plant.

The testing of condensers

is important because

of the havoc that may be wrought in the plant if salt water is permitted to get into the boiler water. It has been found that, if a leak should develop which will cause a salinity of more than about grains of salt per gallon, the water should be turned to waste until such time as the condenser can be tested

and the leak, stopped.

There are two simple

methods of testing the condenser for salt when the plant is on load. One of these consists of drawing a sample of water and analysing it in the usual manner for salinity by the chemical process (Vol. IV). The other method is an electrical one. An apparatus can be arranged to give an alarm directly the salinity reaches a predetermined value. The apparatus is simple, and has been at work for some time, and up to the present it has given very good results (fig. 12).

When it comes to finding the leak in the condenser, the work usually has to be carried out during the periods of light load, when the turbine plant

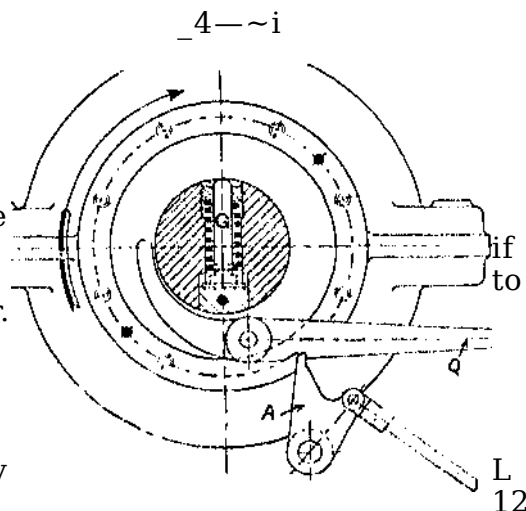


Fig. 14.—Emergency Governor

can be shut down. The air-pump connections are either blanked off, or a valve is provided that can be shut. The manhole is then opened at the top of the condenser, which allows the condenser body to be filled with fresh water. The manhole doors in the condenser end plates are also opened and an inspection is made of all the nipples in the condenser tube plates until the leak is discovered. It is quite a common thing to find that a number of tubes begin to fail simultaneously, and though each allows only a minute leak, together they are dangerous.

On a big condensing plant this test may take as long as six hours. It is by far the quickest method, however, that has yet been tried, and is the most certain in its results.